

# Research at S.C. State to improve pesticide practices of food industry

Results from a new pest management study at South Carolina State University will help ensure the state's food producers and suppliers meet consumers' demands for high-quality, competitively priced food and feed commodities while reducing the use of pesticides and their harmful effects to humans and the environment.

The university's 1890 Research and Extension Program awarded a \$350,000 Evans-Allen research grant to S.C. State's Dr. Rizana Mahroof, assistant professor in biological sciences, who will lead the collaborative research project. Federal and non-federal sources fund Evans-Allen formula grants, which support research at 1890 land-grant institutions.

"There is a global consensus that insecticides are dangerous to humans, contributing to many serious illnesses, and the use of the chemicals is detrimental to the environment," Mahroof said. "Researchers, professionals in the food and pest management industries and environmentalists are now looking for alternative environmental and human-friendly methods that either manage or control pests."

Managing the pest problem is also important as the contamination and damage caused by insects in food products — most especially stored products such as wheat, corn, rice, other cereal grains, grain-based products, spices, and nuts —

cause billions of dollars in yearly losses to the food industry, and also reduce the food supply available for human consumption, Mahroof said.

To develop safer and more effective pest-management practices, the entomologist will examine and determine the critical sources of infestation and the habitats and breeding sites outside the stored product environment. She will also test the effectiveness of innovative pest management strategies such as utilizing insect produced pheromones to disrupt communication among insects that ultimately leads to the suppression of the population.

The research project includes an outreach or extension component that will train S.C. State undergraduate and graduate students to educate farmers, industry representatives and pest-control operators on implementing the best practices of reduced risks in pest management for stored products.

Mahroof will also work with entomologists from two research universities, Dr. Eric Benson of Clemson University and Dr. Thomas Phillips, Kansas State University, who will conduct on-the-field trainings to constituents in their regions.

In addition, S.C. State will partner with three companies that specialize in bio-rational means of pest control, through pheromones and other least

toxic measures that will not harm non-target organisms, i.e., humans and pets. The companies are Insects Limited Inc. of Westfield, Ind., Trece Inc. of Adiar, Okla., and Contech of British Columbia, Canada.

S.C. State officials say the study will help revitalize the Department of Biological and Physical Sciences' focus in entomology and generate interest among students in the study of insects.

"We are excited that Dr. Rizana Mahroof, a new assistant professor in the biology department, received funding to conduct cutting-edge research in entomology. The study will result in a new innovative technique to control insects in stored products. Our majors will be exposed to new technologies that impact pest management," said Dr. Judith Salley, chair of the Department of Biological Science at SC State.

"In addition, Dr. Maroof's expertise in entomology will allow the department to revitalize the entomology course, a course that has not been offered for many years, and provide extensive collaborative research opportunities and training for students not only with Clemson and Kansas State but with regional and national USDA agencies," she said.

For more information about the reduced-risk pest management study, contact Mahroof at 803-536-8174 or [rmahroof@scsu.edu](mailto:rmahroof@scsu.edu).

